

This and the other paper¹ mentioned in the foot-note, which contained a few pages on the circumboreal distribution of molluscan species, were omitted from the bibliography of Dr. Dall's volume.

A FEW NOTES ON SAY'S EARLY WRITINGS AND SPECIES.

BY V. STERKI.

Again and again, these last years, I have looked over a copy of T. Say's "Conchology" in the "British Encyclopedia" (Nicholson's),² and found a few things which caught my attention particularly and appear worth mentioning and discussing if compared with our present interpretation. It is unnecessary to say that the remarks are not written for the sake of criticizing the father of conchology in this country. His difficulties were doubtless great with respect to both working up his material and having the articles printed according to his intentions.

Of the introduction and general description, I would refer only to one point or two. Say justly protests against the view then prevalent, that the beaks of a bivalve mark the under side, stating that in the natural position of the mussel they are above. At the same time, what we now regard as anterior and posterior parts, he designates as the right and left sides, evidently from lack of knowledge of the organization of the soft parts. Hence also the terms: "æquilateral and inæquilateral," for which we now must say "equipartite and inequipartite." He calls the distance from the beaks to the opposite or "posterior" margin as length, the one at right angles to it as breadth, as some noted conchologists have done up to recent years. It is interesting to note, however, that soon he approached a more correct conception, even in the same article: in descriptions, *e. g.*, of *Unio ovatus* and *ochraceus*, and *Anodonta marginata*, he speaks of a front and a posterior end, only mistakes them for each other, a view which also has been held tenaciously for a long time by many conchologists. In this way apparent contradictions are

¹ On the History and Distribution of the Fresh-water Mussels, etc. Proc. Cal. Acad. Sciences, Nov. 20, 1882.

² Probably of 1818 or 1819; there is no date, and nothing referring to the time of publication, except that the author mentions his "detached essays in the Journ. Acad. Nat. Sc.," and to the "former editions of this work."

easily explained. That Say terms primary teeth what we now call cardinals or pseudocardinals, may be mentioned by the way.

As to the arrangement it is interesting to note that the first genus is *Helix* (made up of our *Polygyra*, *Zonitidæ*, *Vallonia*, *Strobulops*, *Patula* [*Pyramidula*], *Helicodiscus*, variously mixed up); then follow: *Polygyra* (P. s. str.), *Oligyra* (= *Helicina*), *Planorbis*, *Lymnæa* (including *Physa*), *Succinea*,¹ *Cyclostoma* (*Valvata*), *Ancylus*, *Palu-*

These things are mentioned just for an historical reminiscence, and also to show the changes brought on by anatomical examination and more minute distinction.

Some notes on species:

Helix lineata. Reference is made to Journ. Acad. Nat. Sc., I, p. 18, but no mention of *Planorbis parallelus*.

Succinea ovalis. Alt. 11.25, aperture alt. 8.75 mill.² Say states that the species is common; how is it, then, that no larger specimens were found, if *ovalis* were identical with *obliqua*? and that Say described the latter as new, only a few years later? (as 17.5 mill. high). A. Binney (Terr. Moll., II, p. 71) asserts that the two are identical, or varieties of the same species, yet does not use the older name; and he does not state whether there are any undoubtedly authentic *ovalis* Say on hand, giving evidence of the identity. In the absence of such, doubts should be permitted. Dr. Dall seems to have the same view.

Unio crassus. From the description it is evident that not only several species are included under the name—as the author himself suspects—but that rather forms of *Unio*, resp. *Quadrula* are understood, including *undulata* Barnes,³ and probably *tuberculata* Raf. A description of *Lamps. ligamentina* would be quite different, and especially so of the prevalent form of the Ohio river (= var. *gibbus* Simpson). The figure has resemblance to a female *L. liga-*

¹ Yet he adds the remark: "The characters of the inhabitant (= soft parts) are widely distinct from the animal of the *Lymnæa*, and are somewhat allied to those of the inhabitants of the *Helices*."

dina (our *Anaticola*, *Pomatopsis*, *Liolpax*, *Goniobasis*, *Vivipara*, *Campeloma*), *Pupa*, *Polyphemus* (= *Glandina*), the bivalves: *Unio*, *Alasmodonta*, *Anodonta*, *Cyclus*, *Cyrena*.

² Say gives the dimensions in inches; for convenience of comparing, they are reduced to millimeters.

³ As even more evident from the description of *U. plicata*, following.

mentina. Except eventually for that, *U. crassus* cannot be regarded as a synonym of the species named, and it would be best to drop the name.

Unio plicata. Unfortunately, the author failed to cite the dimensions. To judge from the description and also the locality, Lake Erie, it seems that not the large "typical" *plicata* of *e. g.*, the Mississippi and Ohio rivers was understood, but the well marked "variety," known also *e. g.*, from the Kankakee river.

U. ochraceus. Description and figure evidently are drawn from a young, resp. adolescent specimen, two or three years old, and the differences as pointed out from *cariosus* (the figure represents a mature female) are mostly due to this fact.

Cyclas similis. The description shows decidedly that the mussel understood is not what has been taken for *Sphærium simile*, resp. *G. sulcatum* Lam.; the size given is: long. 10, alt. 8.75 mill. Any specimen of *G. sulcatum*, 10 mill. long, is rather young, not "sub-orbicular," but elongate, and little inflated. The figure also, however imperfect it may be, cannot represent a *G. sulcatum*. The species described seems to be either *G. striatinum* Lam, or *stamineum* Con., probably the former. The statement that "a specimen measured in length¹ nearly three-fifths of an inch," makes it probable that a *G. sulcatum* was mixed in. Whether there are any authentic specimens in a collection, and what they prove, I know not; but from what has been said, we will do well to revert to the name *G. sulcatum* Lam., which seems well established.

There are a number of typographical and other errors, and mistakes in the article; *e. g.*, under *Paludina*, three species are designated as "L.": *Subcarinata*, *Virginica*, *Vivipura*; evidently the author had ranged them under *Lymnæa* previously, and then forgot to change the genus initials. Under *Anodonta marginata*, pl. 3, fig. 3, is cited; evidently it should be fig. 5, although the dimensions do not agree exactly with the description, as they do with respect to other species. *Helix thyroidus* is described. What good reason is there now to spell *thyroides*, after the original spelling had been generally adopted until 1850, and partly later? I allude to this, as compared with *Planorbis exacuus*, which is not in the article considered, that Say himself changed, corrected, the nonsensical and

¹ Probably altitude, in conformity with Say's terminology; no "breadth" is given.

impossible word into *exacutus*, or others did, is enough to show that it was an error. The purpose of nomenclatural rules is to prevent mistakes and misunderstandings; the means, to adhere to the original spelling, so far as consistent with sense. In the case of *Pl. exacutus* for *exacuus*, there is no possibility of a mistake, and I, for one, shall write *exacutus* after this.

In Say's article there is under Cyrena: "Shell triagonally rounded . . .," evidently an error; it should be "trigonally." If this were in a name it would be perpetuated like "exacuus."

MOLLUSCAN FAUNA OF MONTEREY BAY, CALIFORNIA.

BY S. S. BERRY.

(Continued from p. 22.)

Cylichna eximia Baird. 12 fathoms.

Cylichna attonsa Carpenter. 28 fathoms; one young specimen.

Tethys (= *Aplysia*) *californica* Cooper (?). The common seabare of Monterey Bay seems to differ somewhat from those of the southern part of the state, and may prove to be distinct when a careful anatomical examination has been made of both. The form obtained is quite common along the shore. It is large and of a brown color, irregularly blotched.

Tethys (*californica*, var.?). A small red form was dredged at 12 fathoms depth, which may or may not prove distinct from the shore form. At any rate, it is very different in appearance.

Archidoris montereyensis Cooper. 25 fathoms. Whether one collects along the shore or dredges in the bay, the Nudibranchs form one of the most striking and characteristic features of marine life in the Monterey region. Neither individuals, nor species, nor even genera, are few in number, as the following incomplete list will show. For the identifications, Professor MacFarland's careful paper on the Monterey Bay opisthobranchs (Bulletin of the Bureau of Fisheries, Vol. XXV) is the best work, and was constantly used by us as a text book in their study. It is beautifully illustrated, and should be in the library of every Pacific coast student.

Anisodoris nobilis MacFarland. Very common at low tide.

Rostanga pulchra MacFarland. A few of these bright-red animals found at low tide.